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Monticello
Long-Term Surveillance and Maintenance
Administrative Manual

April 2002

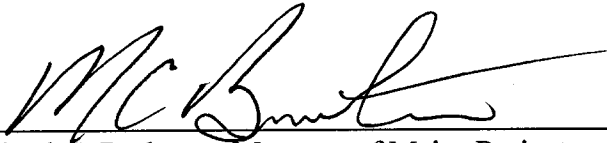
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Monticello Long-Term Surveillance and Maintenance Administrative Manual

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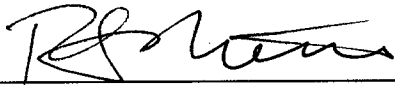
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Appendices will be provided upon request. Click [appendices](#) to request.

- Appendix A Quality Assurance Project Plan for the Monticello Long-Term Surveillance and Maintenance Project
- Appendix B Information Repository Index

Glossary

The terms defined below are applicable to this manual and the associated operating procedures (Volumes I through IV).

Administrative Record—A file, available for public inspection, that contains documents that form the basis of a response action. The administrative records for the Monticello CERCLA sites are located at the DOE–GJO. A duplicate copy is located in the Information Repository.

Annual inspection—A review of the work and documentation conducted by the Monticello LTSM Representative combined with a visit to the site to determine protectiveness of the remedy. One or more persons knowledgeable with the site conduct the annual inspection.

Asbestos—Material that is harmful to human health or the environment and that is specifically defined and regulated under the Toxic Substances Control Act.

Carrier Operators—Drivers of vehicles that transport radiologically contaminated materials; carrier operators may include the Monticello LTSM Representative, city of Monticello or Utah Department of Transportation (UDOT) workers, or common carriers.

CERCLA Five-Year Report—The results of a review conducted every five years are summarized in this report. The report states whether the remedy is protective of health and the environment, documents any deficiencies found, and recommends specific actions to ensure that the remedy will continue to be protective.

CERCLA Hazardous Substance—Material that is harmful to human health or the environment and that is specifically defined and regulated under CERCLA.

Certified Shipper—A person who has received DOE-approved training to ship radioactive or hazardous material.

Chief Inspector—Lead inspector of the LTSM inspection team, responsible for writing the annual inspection report; staff member of the LTSM Program (other than the Monticello LTSM Representative in Monticello).

Controlled Area—Any area to which access is managed in order to protect individuals from inadvertent exposure to radiation and/or radiologically contaminated materials.

Controlled Distribution—Any document for which distribution and status are to be kept current by the issuer to ensure that authorized holders and users of those documents have available the most up-to-date version.

Contractor LTSM Project Manager—Grand Junction Office-based DOE-contractor employee responsible for administering the Monticello LTSM project.

Delta ScintillometerC The ELB00018B delta-gamma scintillometer. The instrument measures soil Ra-226 concentrations in units of counts per second which may be converted to picocuries per gram (pCi/g).

Difficult to Remove Material—Radiologically contaminated material with a Ra-226 concentration greater than 130 pCi/g that cannot be easily removed using hand tools and having a volume greater than one cubic yard.

DOE–GJO LTSM Project Manager—Grand Junction Office-based DOE employee with overall responsibility for managing the Monticello project.

DOT Radioactive Material—Radioactive material that meets the DOT definition of radioactive material, that is, any material having a total activity exceeding 70 becquerel/g. Total activity is the sum of all activities of the radionuclides present in the material.

Easily Removed Material—Radiologically contaminated material with a Ra-226 concentration greater than 130 pCi/g that can be removed with a shovel or similar hand-operated tool and having a volume less than or equal to 1 cubic yard.

EPA StandardC The EPA “Radium in Soil Standard” found in 40 CFR 192 states that the Ra-226 concentration in soil shall not exceed 5 pCi/g above background in the first 15 centimeters (cm) of soil, averaged over 100 m², and shall not exceed 15 pCi/g above background in any subsequent 15-cm layer averaged for all depths over 100 m². As a conservative approach, only the 5 pCi/g surface standard will be applied during LTSM activities. Normal background in the Monticello area is 1.0 pCi/g, making the standard 6.0 pCi/g.

Field Office—The building location in Monticello, Utah, of the Information Repository and the office for the Monticello LTSM Representative. The address of this office is 7031 South Highway 191, Monticello, Utah 84535.

Field Recognition Criteria—Anomalous physical conditions that would lead an inspector to believe that material has been released that may be harmful to human health or the environment. These physical conditions may be observed via sensory perceptions (e.g., sight, odor, etc.) or with field screening equipment such as a photo ionization detector.

Five-Year Review Team—A team consisting of at least two members who conduct the CERCLA Five-Year Review and write the CERCLA Five-Year Review report. The Contractor LTSM Project Manager selects the team.

Gamma ScintillometerC An Eberline Model E-600 ratemeter with an external, crutch-mounted detector consisting of a 1.5-inch-thick by 1.5-inch-diameter sodium iodide crystal. This instrument reads in counts per second that may be converted to μ R/hr.

Government Owned Piñon/Juniper Properties—These properties are identified as MP-00391-VL, Phase III; MP-01077-VL, Phase II; and MP-01041-VL. These properties are owned by the City of Monticello.

Habitable Structure—A structure intended for human habitation.

Hazardous Waste—Waste material that is harmful to human health or the environment and that is specifically defined and regulated under the Resource Conservation and Recovery Act.

Hazardous Substances—For purposes of this document, the term “hazardous substances” includes CERCLA hazardous substances present in concentrations greater than EPA’s risk-based clean-up concentrations, hazardous waste, polychlorinated biphenyls, and asbestos.

Information Repository—A collection of documents describing the remediation for OUs I, II, and III, and the Vicinity Properties as well as those documents generated as a result of long-term surveillance and maintenance. The collection is located at the Monticello Field Office and maintained for review by the public, EPA, and the State of Utah.

Inspection—Review and observation by a formally constituted team for the purpose of oversight, mobilized either at regular intervals or in response to specific concerns.

Institutional Controls—Administrative procedures that are implemented to ensure that a remedy is protective of human health and the environment. For example, a restriction on the use of ground water is an institutional control.

Leachate Collection and Removal System (LCRS)—An engineered system designed to transfer water draining from the repository or Pond 4.

Leak Detection System (LDS)—Sumps designed to detect and collect water that may have leaked through the primary liner of the repository or the secondary liner of Pond 4.

Low Specific Activity (LSA)—LSA material is defined by the DOT to include several distinct categories. For the purposes of this procedure the DOT definition of LSA-1 [49 CFR 173.403, (I) and (iv)] is used. LSA definition (I) is: “Ores containing only naturally occurring radionuclides (e.g., uranium, thorium) and uranium or thorium concentrates of such ores.” LSA definition (iv) is “Mill tailings, contaminated earth, concrete, rubble, other debris and activated material in which the Class 7 (radioactive material) is essentially uniformly distributed and the average specific activity does not exceed 10^{-6} A2/g.” The A2 value is obtained from 49 CFR 173.435.

LTSM Record Collection—A set of programmatic and site-specific records documenting development and implementation of the LTSM Program. The collection is located at the DOE–GJO.

LTSM Record Custodian—The person responsible for obtaining, controlling, and storing the LTSM record collection.

LTSM Working File Index/Plan—A (living) document that defines project records, file organization, records custodians, active file locations, file transfer instructions, bar coding instruction, and other project-specific records guidance necessary to effectively manage project records. Revisions to this document are controlled.

Major Excavation—Excavations that require the use of heavy motorized equipment to excavate soil beneath or adjacent to city streets, utilities, or Highways 191 or 666 rights-of-way. For

example, replacing or repairing a buried utility line, installing a culvert, replacing road base beneath a paved surface, or replacing fill material comprising an embankment would constitute a major excavation.

Minor Excavation—Excavations that can be made with hand tools or hand-operated mechanical tools (i.e., post-hole augers).

Mixed Waste—Waste material that is regulated under the Resource Conservation and Recovery Act as hazardous waste and that also meets the definition of radiologically contaminated material.

Monticello LTSM Representative—A Monticello, Utah-based contractor employee residing in the Monticello area, and on call 24 hours a day, 7 days a week. A backup person is available to perform the duties required of the representative when necessary.

Observations—Data recorded in a formal manner suitable for communication, interpretation, or processing.

Photographic Material—35 mm negatives; self-developing film shall not be used for record material.

Planned Excavation—Excavations that are part of the annual budget and planning process for the city of Monticello and UDOT; excavations that are included in the city's Street Improvement Master Plan or in UDOT's Statewide Transportation Improvement Plan or Spot Improvement Plan.

Polychlorinated biphenyl (PCB)—Material that is harmful to human health or the environment and that is specifically defined and regulated under the Toxic Substances Control Act.

Privately Owned Piñon/Juniper Property—This property is identified as MS-00176-VL.

Project File Number—A project- and site-specific alphanumeric code (e.g., LMNT 1.1) used to identify, organize, control, disposition, and manage project records. The number consists of L (for LTSM Program) plus a site acronym (MNT for Monticello) plus a unique numeral (e.g., LMNT 1.1.1).

Protectiveness Statement—A statement in the CERCLA Five-Year Review report that documents whether a remedy is or is not protective of human health and the environment.

Radiological As-built—Engineering drawings, located in the Monticello LTSM Representative's office, that identify radiation levels at individual properties.

Radiological Control Manager—The person, located at the GJO, who leads and is responsible for the Radiological Protection Program; he/she must be qualified in accordance with the applicable *Radiation Protection Program Plan*.

Radiologically Contaminated Materials—Residual radioactive material resulting from DOE-related uranium and vanadium ore processing that contains Ra-226 concentrations

exceeding background by more than 5 pCi/g in the surficial 15 cm of soil averaged over 100 m², or more than 15 pCi/g in successively deeper 15-cm layers averaged over 100 m².

Radioactive Material Area—An area or structure where radiologically contaminated material in excess of 130 pCi/g Ra-226 is used, handled, or stored.

Radiological SurveyC To delineate and document the surface area and radionuclide activity in counts per second (cps) or microroentgen per hour (μR/hr). The vertical extent of contamination and radionuclide concentrations in pCi/g may also be determined.

Record—Information or data on a specific subject collected and preserved in writing or other permanent form that has been verified and authenticated as complete and correct. Records may include photographs, photograph negatives, drawings, forms, reports, and record books.

Record Book—For the purposes of this procedure, record books will refer to the field notebooks kept by the Monticello LTSM Representative for each of the supplemental standards properties and the TSF.

Reportable QuantityC Quantity of material defined in Table 1, Appendix A, of 49 CFR 172.101 and referenced under 40 CFR 302.4, that if released must be reported to the EPA.

Repository Cover—A multilayered earthen and geomembrane barrier overlying the mill tailings. The cover is designed to prevent radon emission and create a barrier for surface water infiltration into the repository.

Soil and Sediment Properties—These properties are identified as MP-00951-VL, MP-00990-CS, MP-01084-VL, MG-01026-VL, MG-01027-VL, MG-01029-VL, MG-01030-VL, and MG-01033-VL.

SpillC Any accidental release of petroleum products, hazardous substances, or radiologically contaminated material from packaging, containments, or transport vehicles.

Surveillance—The act of monitoring or observing to determine whether an item or activity conforms to specified requirements; routine observations that do not require the involvement of formal inspection teams.

Supplemental Standards Properties—Property where radioactive contamination was left in place in compliance with 40 CFR Part 192, *Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings*. These properties are, the City of Monticello streets and utilities, Highways 191 and 666 rights-of-way, privately owned piñon/juniper property, government owned piñon/juniper properties, and the soil and sediment properties.

Suspect Hazardous Substance—Any material that exhibits field recognition criteria that would indicate the material is potentially harmful to human health or the environment. Because sampling and analysis has not been completed, the material is “suspected” to be a hazardous substance.

Technical Review—A formally documented review of technical material performed by individuals independent of those directly responsible for the work but who may be members of the organization that performed the work. A Technical Reviewer shall have expertise at least equal to that of the individual(s) who prepared the material under review.

Transportation Incidents or Emergencies—Any spill, release, accident, medical situation, or potential situation that may occur while loading, unloading, or inspecting a vehicle for transport; any spill, release, accident, medical situation, or potential situation that may occur while transporting materials in a vehicle on public highways.

Unplanned Excavation—Excavations that are not planned but are necessitated by an emergency situation (e.g., a utility line break) or occur as a result of a natural event (e.g., a flood, storm, or subsidence event).

Working File Index—A computerized list of all documents that identifies the location of the documents.

Acronyms

The acronyms listed below are applicable to this manual and the associated operating procedures (Volumes I through IV).

AEC	Atomic Energy Commission
ARAR	applicable or relevant and appropriate requirements
bq	becquerel
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cm	centimeter(s)
CWA	Clean Water Act
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
dpm	disintegrations per minute
EA	environmental assessment
EPA	U.S. Environmental Protection Agency
ESD	Explanation of Significant Difference
FFA	Federal Facilities Agreement
ft	feet
GJO	Grand Junction Office
gpad	gallons per acre per day
gal/min	gallon per minute
HASP	Health and Safety Plan
HDPE	high density polyethylene
HQ	Headquarters
ID	Idaho Operations Office
IRA	interim remedial action
JSA	Job Safety Analysis
LCRS	Leachate Collection and Removal System
LDS	Leak Detection System
LTSM	Long-Term Surveillance and Maintenance
m ²	square meter(s)
mm	millimeter(s)
MMTS	Monticello Mill Tailings Site
MOU	Memorandum of Understanding
MVP	Monticello Vicinity Properties
NORM	Naturally Occurring Radioactive Materials
NPL	National Priorities List
O&M	Operation and Maintenance
OJT	on-the-job (training)
OU	Operable Unit
PCB	polychlorinated biphenyl
PeRT	permeable reactive treatment
PID	photo ionization detector
P/J	piZon/juniper
PPE	personal protective equipment
ppm	parts per million

PRP	potentially responsible party
pCi/g	picocuries per gram
QAPjP	Quality Assurance Project Plan
QAPP	Quality Assurance Program Plan
RCRA	Resource Conservation and Recovery Act
RCT	Radiological Control Technician
RI/FS	Remedial Investigation/Feasibility Study
ROD	record of decision
RPPP	Radiation Protection Program Plan
RW II	Radiological Worker II (Training)
SARA	Superfund Amendments and Reauthorization Act
SCADA	Supervisory, Control, and Data Acquisition
TAR	Technical Assistance and Remediation
TBC	to be considered
TSF	Temporary Storage Facility
UAC	Utah Administrative Code
UDEQ	Utah Department of Environmental Quality
UDOT	Utah Department of Transportation
UMTRCA	Uranium Mill Tailings Radiation Control Act
μR/h	microrentgens per hour

Executive Summary

The Monticello Mill Tailings Site (MMTS) and Monticello Vicinity Properties (MVP) have been remediated by the U.S. Department of Energy (DOE) Grand Junction Office (GJO) in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986. In October of 2001, long-term surveillance and maintenance (LTSM) activities were initiated because contamination remains in the repository, in the soil at other locations where supplemental standards have been applied, and in ground and surface water. The remedy for ground and surface water will be selected when the effects of soil remediation on water quality are determined. As part of the CERCLA process, DOE will continue to monitor the sites, with oversight provided by the U.S. Environmental Protection Agency (EPA) Region VIII and the Utah Department of Environmental Quality (UDEQ), to ensure the following:

- compliance with applicable or relevant and appropriate regulations (ARARs),
- remedial actions taken remain protective of human health and the environment, and
- adequate information is collected for preparation of the CERCLA Five-Year Review report.

This manual is the umbrella document that provides a summary of the LTSM activities that will be conducted at Monticello, Utah. Detailed procedures that implement these activities are provided in four volumes of operating procedures. Collectively, the LTSM Administrative Manual and the four volumes of operating procedures, which are identified below, comprise the long-term surveillance plan for the Monticello CERCLA sites.

Volume I is the *Long-Term Surveillance and Maintenance Operating Procedures for the Monticello Mill Tailings Site Repository and Millsite* (DOE 2001a). Detailed procedures are provided in Volume I for conducting LTSM activities associated with Monticello Repository, Pond 4, and the former Monticello Millsite.

Volume II, the *Monticello Long-Term Surveillance and Maintenance Operating Procedures for Supplemental Standards Properties* (DOE 2001b), contains procedures for conducting LTSM activities at locations where contamination has been left in place.

Volume III, which has not been written, will address operating procedures for LTSM activities associated with surface and ground water. This volume will be written after the Record of Decision for the Monticello Surface and Ground Water Project has been finalized.

Volume IV, the *Monticello Long-Term Surveillance and Maintenance Operating Procedures for Annual Inspections and CERCLA Five-Year Reviews* (DOE 2001c), identifies how annual inspections will be conducted and provides procedures for conducting the CERCLA Five-Year Review and writing the associated report. CERCLA Five-Year Reviews are required because contamination remains at the MMTS and MVP above levels that allow for unlimited and unrestricted exposure. This volume incorporates the most recent EPA guidance for conducting CERCLA Five-Year Reviews. Activities are currently being undertaken as part of the interim remedial action for Monticello Surface and Ground Water project that provide protection for human health and the environment. Institutional controls have been put in place prohibiting the use of contaminated alluvial ground water. A treatability study, in which a Permeable Reactive

Treatment Wall that removes contaminants from the ground water, has also been implemented. Ground and surface water monitoring are being conducted to better understand the effects of millsite remediation on water quality.

The next five-year review is due in June 2002. Subsequent five-year reviews are triggered 5 years from the previous submittal date.

1.0 Introduction

This Long-Term Surveillance and Maintenance (LTSM) Administrative Manual is a compendium of plans, procedures, and documents intended to implement the overall LTSM requirements associated with the Monticello Mill Tailings Site (MMTS) and Monticello Vicinity Properties (MVP) site. This administrative manual discusses the LTSM Operating Procedures and cites the more specific references that define the LTSM tasks for post-closure care at the various Monticello Millsite related remedial actions.

The purpose of this LTSM Administrative Manual is to provide a general overview of the activities required to ensure long-term effectiveness of the remedial actions. Administrative procedures that are common to all aspects of the LTSM Program are also included in this manual. LTSM Operating Procedures Volumes I, II, III, and IV identify specific procedures that personnel shall adhere to in order to implement the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. ' 9601 *et seq.*) long term monitoring requirements. LTSM Operating Procedures Volumes I, II, III, and IV also contain detailed plans describing how the U.S. Department of Energy (DOE) will implement its surveillance and monitoring activities to ensure the remedial actions taken at the Monticello National Priorities List (NPL) sites remain protective of human health and the environment. A chart showing the various LTSM related documents and the document relationships is included as [Figure 1-1](#).

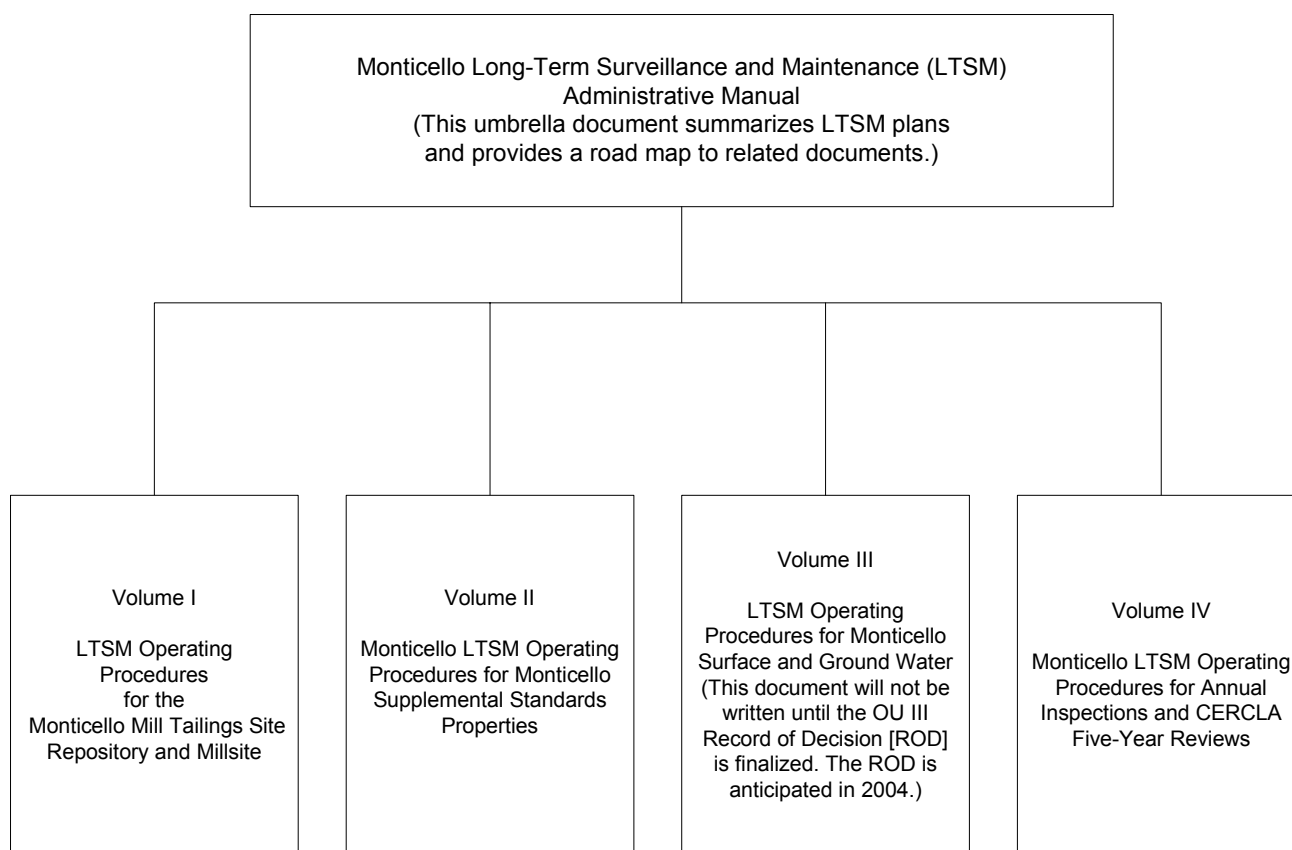


Figure 1-1. Monticello LTSM Plan Configuration

References are made to various DOE and contractor personnel in this manual and the LTSM Operating Procedures. [Table 1–1](#) contains the names of the individuals currently fulfilling these positions.

Table 1–1. Personnel Identification

Title	Individual	Organization	Assigned Location
DOE–GJO Manager	Donna Bergman-Tabbert	DOE	Grand Junction Office
DOE–GJO Deputy Manager, Monticello Project Lead	Ray Plienness	DOE	Grand Junction Office
DOE–GJO Monticello Project Manager	Joel Berwick	DOE	Grand Junction Office
DOE–GJO LTSM Project Manager	Art Kleinrath	DOE	Grand Junction Office
Major Projects Manager	Michael Butherus	Contractor	Grand Junction Office
Contractor LTSM Program Manager	Carl Jacobson	Contractor	Grand Junction Office
Contractor LTSM Project Manager	Tom Kirkpatrick	Contractor	Grand Junction Office
LTSM Record Custodian	Antoinette Garcia	Contractor	Grand Junction Office
Monticello LTSM Representative (Lead)	Joe Slade	Contractor	Monticello, Utah
Site Safety Supervisor	Joe Slade	Contractor	Monticello, Utah
Monticello LTSM Representative	Todd Moon	Contractor	Monticello, Utah
Radiological Control Manager	Michael Hurshman	Contractor	Grand Junction Office
Health and Safety Manager	Michael Hurshman	Contractor	Grand Junction Office
QA Manager, Monticello Project	Ardis Rukavina	Contractor	Grand Junction Office
QA Lead Monticello Program	Ardis Rukavina	Contractor	Grand Junction Office

Throughout the manual, various words are used to describe actions. The following words have the following meanings:

- “Shall” indicates a requirement, as do the synonyms “will” and “must.”
- “Should” indicates a recommendation.
- “May” indicates permission and is neither a requirement nor a recommendation.

2.0 Scope

The scope of this LTSM Administrative Manual is limited to those activities that must be conducted to ensure continued protection of human health and the environment, to ensure that remedies selected for the MMTS and MVP remain effective, and to support transfer of information to stakeholders; including the public, the U.S. Environmental Protection Agency (EPA), and the Utah Department of Environmental Quality (UDEQ). LTSM activities are applicable to the on-site Repository (permanent disposal cell), its leak detection system (LDS) and leachate collection and removal system (LCRS) (which includes Pond 4), and the former millsite. LTSM activities are also applicable to supplemental standards properties at which contamination was left in place. Supplemental standards properties include Monticello city streets and utilities, private property, Utah Department of Transportation (UDOT) rights-of-way, and government owned piñon/juniper (P/J) property. LTSM activities are also applicable to the Monticello Surface and Ground Water project; however, LTSM activities for this project will not be identified until a final remedy has been selected.

LTSM activities described in this manual and the associated operating procedures (Volumes I through IV) are designed to lead to acceptable CERCLA Five-Year Reviews. Adherence to these plans and procedures will result in collection of data documenting the long-term effectiveness of remedial actions taken.

The overall objective of LTSM is to manage the repository and any contamination left in place at the MMTS and MVP. The LTSM program is being implemented to ensure that the remedies in place remain protective of human health and the environment. These documents develop plans and procedures for implementing LTSM, maintaining site records, and disseminating information to the stakeholders and the public. Adherence to the operating procedures in Volumes I through IV will provide data and information necessary for completing the mandatory CERCLA Five-Year Review and making a determination whether the remedy continues to be protective of human health and the environment.

End of current text

3.0 Background

The Monticello Mill and an associated ore-buying station operated from 1940 to 1946 under private ownership and from 1948 to 1960 under the U.S. Atomic Energy Commission (AEC). Ore was processed to recover uranium and vanadium at Monticello from 1942 to 1944, in 1945 and 1946, and again from 1948 to 1960. The ore-buying station opened in 1940 and closed in 1962. Between 1961 and 1965, various measures were taken to dismantle the mill, dispose of equipment and scrap, bury contaminated materials, regrade the tailings piles, cover the tailings and contaminated materials with soil, and revegetate the site. Part of the Millsite, including a few intact buildings, was transferred to the Bureau of Land Management in 1962. The rest remained in the custody of the AEC and its successor agencies, first the U.S. Energy Research and Development Administration and later the DOE.

Throughout the operating period, mill tailings from the Monticello millsite were used in the City of Monticello for construction. These tailings were used as fill for open lands; backfill around water, sewer, and electrical lines; sub-base for driveways, sidewalks, and concrete slabs; backfill against basement foundations; and as sand mix in concrete, plaster, and mortar. Contamination was also spread by wind and through erosion along Montezuma Creek.

Radiological surveys were conducted throughout the City of Monticello to identify the existence, nature, and magnitude of radiation exposure from mill tailings originating from the Monticello millsite. Initial surveys were performed in 1971 to identify properties in the vicinity of the millsite that were contaminated with uranium mill tailings.

In 1974 and 1975, mill foundations were demolished and buried and the area was regraded and revegetated. A fence was constructed around the millsite to limit access and eliminate the spread of contamination by human use.

Radiological surveys of vicinity properties continued in 1980. These surveys, along with the initial surveys of 1971, resulted in the identification of 98 anomalous properties in the vicinity of the former millsite. In 1982, 16 more properties were surveyed at the request of property owners and were found to be contaminated. In 1983, 36 properties were added to the investigation. Eventually, 424 vicinity properties were determined to be contaminated from material originating from the Monticello millsite and were included for remediation.

In 1983, remedial activities for vicinity properties were separated from those of the millsite with the establishment of the MVP Project. The MVP site was listed on the NPL on June 10, 1986, and was remediated pursuant to a Record of Decision (ROD) dated November 29, 1989. The selected remedy for cleanup of the MVP site was excavation of tailings, ore, and related by-product material from vicinity properties; temporary storage on the Monticello millsite; and final disposal in the same repository described for materials from the Monticello millsite. Because mill tailings from the Monticello millsite were used for construction purposes, cleanup activities included demolition of sidewalks, patios, sheds, and other improvements. Affected properties were backfilled, graded, and reconstructed. Contaminated materials were temporarily placed on the millsite and ultimately disposed with contaminated millsite material. Remediation of the MVP site was completed in 1999 and deletion from the NPL became effective February 28, 2000.

In 1989, the MMTS was placed on the NPL pursuant to CERCLA and the Superfund Amendments and Reauthorization Act (SARA) of 1986 (42 U.S.C. ' 9604 *et seq.*). As the owner and past operator of the site, DOE was identified as the potentially responsible party (PRP) under CERCLA. A Remedial Investigation/Feasibility Study - Environmental Assessment (RI/FS-EA) was conducted pursuant to CERCLA and the National Environmental Policy Act, and the ROD for Operable Units (OUs) I and II (DOE 1990) was signed in 1990. As the PRP, DOE was tasked with funding and performing the remedial actions necessary at the MMTS, as well as maintaining and monitoring the future performance of the remedy chosen to protect human health and the environment at the site.

Because of the complexity of the MMTS, DOE divided the remedial action work into three manageable components called “operable units.” These OUs are described below.

- OU I, Monticello Millsite Tailings and Millsite Property—This OU comprises the 110-acre millsite, tailings impoundment areas on the millsite, and storage areas on the millsite property for tailings-contaminated materials removed from the vicinity properties and peripheral properties. Construction of the on-site Repository (permanent disposal cell) and its leachate collection system is included in this OU. Components of the OU I cleanup remedy include relocating contaminated materials from the millsite to the disposal cell, revegetation after removal of the tailings, realignment of Montezuma Creek, and reestablishment of wetland areas. As stated in Title 40 Part 192 of the *Code of Federal Regulations* (40 CFR 192), “Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings,” control of the waste materials shall be accomplished with a Repository design that is effective for up to 1,000 years to the extent reasonably achievable, and in any case, for at least 200 years.
- OU II, Peripheral Properties—This OU consists of remediation of private and DOE-owned properties peripheral to the millsite that were contaminated by windblown or stream-deposited tailings. It also addresses contaminated soil and sediment transported down stream of the millsite and deposited in and adjacent to Montezuma Creek. Other components of the peripheral property cleanup remedy include revegetation after removal of the tailings and use of institutional controls where supplemental standards were applied, such as limitations on access or use.
- OU III, Monticello Surface Water and Ground Water—This OU consists of contaminated surface water and ground water at and down stream of the millsite. This OU was not part of the original NPL listing. When OU III was designated, it also encompassed contaminated soil and sediment deposited down stream of the millsite in and adjacent to Montezuma Creek. However, DOE decided, with the concurrence of EPA and UDEQ, to address the contaminated soil and sediment areas along Montezuma Creek under OU II. DOE decided in 1998, with the concurrence of EPA and UDEQ, that selection of a final remedy for OU III surface water and ground water was impractical at that time because of the changing conditions on the millsite. The decision was made to implement an interim remedial action that consists of restricting the use of contaminated ground water, in situ treatment of the ground water through a permeable reactive barrier, and continued monitoring and

characterization of the ground water. The interim remedial action is currently in progress. A ROD for the Monticello Surface and Ground Water Project (OU III) is anticipated in 2004.

A related project, the MVP Remedial Action Project, was conducted simultaneously with the MMTS related remedial action efforts. The MVP ROD (DOE 1989) was signed in 1989. A total of 424 properties were ultimately remediated under the MVP Project. Contaminated materials remedied as part of the MVP Project were temporarily stockpiled at the Monticello Millsite and ultimately placed in the MMTS Repository. Deliveries of contaminated materials from off-site properties to the millsite ceased in June 1999 due to completion of the MVP remedial action.

Remediation of the millsite and placement of the tailings in the on-site Repository began in June 1997. Placement of contaminated materials in the Repository was completed in September 1999. Placement of the cover system of the Repository was completed in February 2000. The Repository's LCRS, which was in operation with the onset of tailings placement, is currently removing contaminated water draining from the Repository. The contaminated water is stored in Pond 4, which is an evaporation pond designed to remain in operation until water ceases to drain from the Repository. Based on the engineering design, Pond 4 is expected to remain in service for 5 to 20 years depending on the transient water drainage from the tailings placed in the Repository. A map depicting the millsite, supplemental standards properties, Repository, and Pond 4 is provided in [Figure 3-1](#).

Contaminated materials placed in the Repository consist primarily of uranium mill tailings from the Millsite, vicinity properties, and peripheral properties. The primary contaminant of concern is radium-226. Radium-226 has a half-life of 1,622 years and produces radon gas. Decay products from radon may be inhaled and increase the risk of lung cancer in humans. Other materials disposed of in the Repository include milling byproduct materials, Millsite building and other debris, radiologically contaminated debris from vicinity and peripheral property remediation activities, and small quantities of asbestos and hazardous substances that were discovered during remediation of the respective areas. The total volume of material is approximately 2.54 million compacted-in-place cubic yards. This material will be managed in accordance with the operating procedures in Volume I of this LTSM.

Regulations codified in 40 CFR 192.21 allow contaminated material to be left in place in specific cases if attaining the usual cleanup standards will cause excessive risk of injury, excessive environmental harm, or unreasonably high costs compared with the health benefits to be gained. The site specific remediation standards, called supplemental standards, are applied to areas where contaminated material is left in place. Contaminated materials (primarily mill tailings containing radium-226) were left in place at supplemental standards properties. These supplemental standards properties and the associated areas of contamination are identified in Volume II of this LTSM Administrative Manual. Contaminated material left in place at the supplemental standards properties will be managed in accordance with Volume II of this LTSM Administrative Manual. Lists of supplemental standards properties are provided in [Tables 3-1](#) and [3-2](#) and shown on [Figure 3-1](#).

Table 3–1. MMTS Supplemental Standards Properties

MP-00391	MP-01041	MG-01026	MG-01030
MP-00951	MP-01077	MG-01027	MG-01033
MP-00990	MP-01084	MG-01029	

Table 3–2. MVP Supplemental Standards Properties

MS-00176
City of Monticello Street and Utility Rights of Ways
Highways 191 and 666 Rights Of Way within the City Limits

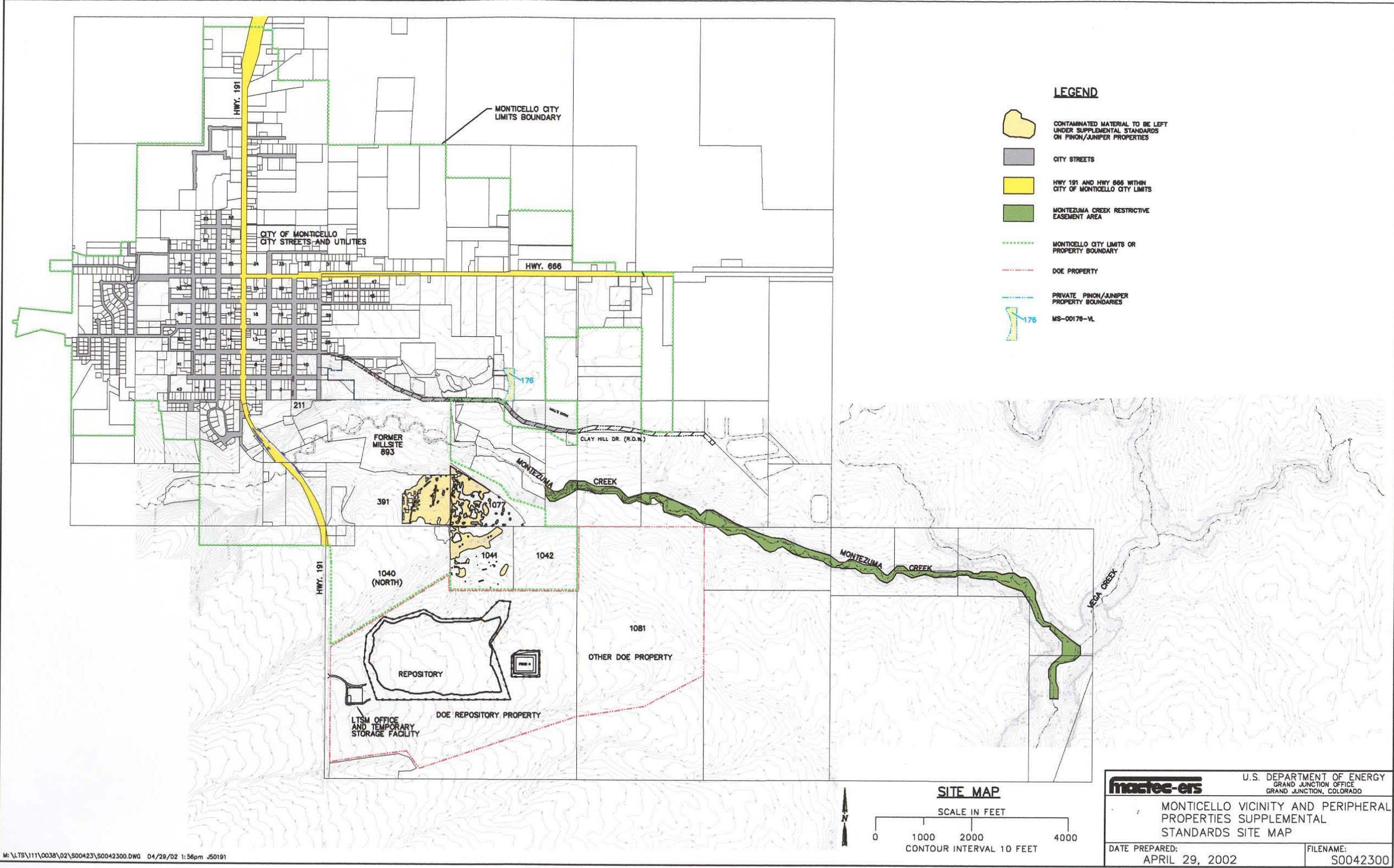


Figure 3-1. Monticello Vicinity and Peripheral Properties Supplemental Standards Site Map

4.0 Regulatory Basis

Upon completion of the remedial action, the millsite, peripheral properties, and vicinity properties become eligible for delisting from the NPL. After delisting from the NPL, the CERCLA process requires periodic reviews, called CERCLA Five-Year Reviews, to ensure the remedy, or remedies, taken remain protective of human health and environment. The Repository site will remain a CERCLA site in perpetuity because of the buried waste as will all locations where contaminated material was left in place and the property was not released for unrestricted and unlimited use. Therefore, the legal and regulatory requirements for the Repository site and supplemental standards areas will continue under CERCLA authority.

The CERCLA evaluation process was used to determine applicable or relevant and appropriate requirements (ARARs) for the MMTS and MVP. Those requirements are listed in Appendix B of the *Monticello Mill Tailings Site Declaration for the Record of Decision and Record of Decision Summary* (DOE 1990) and the *Monticello Vicinity Properties Project Declaration for the Record of Decision and Record of Decision Summary* (DOE 1989). This section presents an evaluation of those ARARs that have a direct bearing on the long-term care of the Repository site once it has been closed. These ARARs provide the standards of control needed to ensure continued protection of human health and the environment. As a continued on-site CERCLA activity, only substantive requirements must be met; compliance with administrative requirements is not mandatory. Permits are not required for on-site actions at CERCLA sites [Title 40 CFR Part 300.400(e)].

The following discussion identifies long-term care ARARs and how each pertains to the Repository site:

- 40 CFR 192 is relevant and appropriate to the design of the Repository. Specifically, 40 CFR 192 requires that the Repository be designed to be effective for up to 1,000 years, to the extent reasonably achievable, and, in any case, for at least 200 years. The *Operable Unit I Millsite Remediation Design* meets this design objective. This LTSM Administrative Manual establishes LTSM criteria for the Repository cover and liner to ensure that the Repository longevity requirements (i.e., effectiveness of the design) are met. Consequently, cover integrity and leakage monitoring are the focus of the site inspections identified for the Repository and associated LCRS.
- 40 CFR 192 allows the application of supplemental standards when the remedial actions required to satisfy the cleanup standards for land would directly produce health and environmental harm that is excessive compared to the health and environmental benefits. Supplemental standards may also be applied when the estimated cost of remedial action to attain numeric standards is unreasonably high relative to the long-term benefits and the residual radioactive materials do not pose a clear present or future hazard. Supplemental standards were approved for properties described in Volume II— *Monticello Long-Term Surveillance and Maintenance Operating Procedures for Supplemental Standards Properties* (DOE 2001b). Site inspections are conducted to ensure that contamination remains in place or is removed and managed properly. In addition, an evaluation of institutional controls (such as ground water and land use limitations) is included in site inspections for the supplemental standards properties.

- 40 CFR 192, along with the Clean Air Act, also defines the radon emission standard for the Repository. Radon emissions must not exceed an average release rate of 20 picocuries per square meter per second, or increase the annual average concentration of radon-222 in air at or above any location outside of the Repository site by more than 0.5 picocurie per liter. The Clean Air Act's National Emission Standards for Radon Emissions from DOE Facilities is applicable to the long-term performance of the Repository because the National Emission Standards for Hazardous Air Pollutants Subpart Q requirements must be met to control radiological contamination on DOE-owned facilities, including the Monticello Repository. The long-term performance of the Repository cover must meet the radon emission standard of 20 picocuries per square meter per second.
- 40 CFR 192 establishes groundwater standards for remedial actions at inactive uranium processing sites. These standards are potentially relevant and appropriate for the remediation of the Monticello millsite because of the potential future use of the aquifer as a public or private drinking water supply. EPA issued guidance in OSWER Directive No. 9283.1-14 addressing the use of uranium standards when setting remediation goals for CERCLA sites that have uranium as a contaminant of concern. The DOE will adhere to this guidance in determining the remediation goals for OU III.
- The Clean Water Act (CWA) is applicable to remediation and restoration of wetland areas located in the MMTS. Under the CWA Section 404 disturbances or discharges of dredged or fill material to a wetland area must be avoided. If there are not practical alternatives and disturbances to a wetland area cannot be avoided, the discharge must be minimized and unavoidable impacts must be mitigated. Remediation plans in accordance with this avoid-minimize-mitigate sequence are established in the *Wetlands Master Plan* (DOE 1996). The plan identifies re-establishment of wetland areas and identifies success criteria. Successful establishment of wetland areas is being conducted under OU I, OU II, and OU III. Once wetlands are re-established, the only monitoring of wetland areas conducted under the LTSM Program will be to determine if damage caused by man is occurring in the wetland areas.
- Utah Ground Water Quality Protection Regulations are applicable to the Repository site because they establish post-closure ground water monitoring requirements. The Repository and Pond 4 must be operated in a manner to ensure that compliance with these ground water quality standards are met in the shallow ground water beneath the Repository site pursuant to Utah Administrative Code (UAC) R317-6. No ground water monitoring will be done unless contingency actions are implemented as described in the *Repository and Pond 4 Ground Water Contingency Plan-Final* (DOE 1998). Ground water quality protection standards established in 40 CFR 192 are integral to post-closure ground water compliance monitoring requirements.
- Utah Hazardous Waste Management Rules are applicable to the Repository site because hazardous waste was placed in the Repository. Therefore, the Repository must comply with all substantive hazardous waste disposal facility care requirements as specified in UAC R315-8. Leachate from the Repository is managed in Pond 4. Only characteristic hazardous waste has been placed into the Repository. Pond 4 is not presently considered a hazardous waste surface impoundment because the leachate is not derived from or mixed with a listed hazardous waste. However, if in the future, the leachate in Pond 4 exhibits any of the characteristics of hazardous waste, Pond 4 will be considered a hazardous waste

surface impoundment and must comply with all substantive hazardous waste disposal facility requirements as specified at UAC R315-8.

The design of the Repository is equivalent to the technical requirements for a Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous-waste landfill; the design of Pond 4 is equivalent to the technical requirements for a hazardous-waste surface impoundment. Utah Hazardous Waste Management Rules define the parameters pertaining to monitoring of leakage at landfills and surface impoundments. Action leakage rates have been established pursuant to the Utah Hazardous Waste Management Rules. Landfill closure and post-closure care activities must also comply with these requirements. These surface impoundment closure and post-closure care activities must also be complied with if Pond 4 is determined to be a hazardous waste surface impoundment.

End of current text

5.0 Monticello Long-Term Surveillance and Maintenance Overview

This manual is an umbrella document that provides a summary of the LTSM tasks necessary to ensure that remedial action remains protective of public health and the environment and is functioning as designed. More specific details of the LTSM plans and specific procedures for implementing the plans are provided in operating procedures. These detailed operating procedures are located in Volumes I, II, III, and IV of this administrative manual (see Figure 1–1).

The four volumes of operating procedures are as follows:

- Volume I—*Long-Term Surveillance and Maintenance Operating Procedures for Monticello Mill Tailings Site Repository and Millsite* (DOE 2001a). LTSM procedures applicable to the repository and ancillary facilities and the former millsite are provided in this volume.
- Volume II—*Monticello Long-Term Surveillance and Maintenance Operating Procedures for Supplemental Standards Properties* (DOE 2001b). This volume describes the procedures used to ensure compliance with institutional controls and land use restrictions placed on properties where contamination is left in place. It also addresses LTSM activities associated with contaminated properties.
- Volume III—*Long-Term Surveillance and Maintenance Operating Procedures for Monticello Surface and Ground Water* (DOE 2004). This volume addresses LTSM activities that are related to MMTS OU III. Presently, ongoing monitoring and surveillance activities are being conducted pursuant to an interim remedial action for surface and ground water that was initiated in September 1998. An RI/FS for OU III will be prepared in 2003 with a final ROD anticipated in 2004. The LTSM operating procedures will not be written until approximately 2004 when the ROD for OU III has been completed.
- Volume IV—*Monticello Long-Term Surveillance and Maintenance Operating Procedures for Annual Inspections and CERCLA Five-Year Reviews* (DOE 2001c). This volume describes the annual inspections in detail and addresses the manner in which the ongoing LTSM activities provide the data and information necessary for the successful completion of the CERCLA Five-Year Review. The EPA guidance document entitled “*Comprehensive Five-Year Review Guidance*” (EPA 2001) is the basis for this volume.

5.1 Long-Term Surveillance and Maintenance Site Repository and Millsite

Volume I—*Long-Term Surveillance and Maintenance Operating Procedures for Monticello Mill Tailings Site Repository and Millsite* (DOE 2001a) addresses LTSM activities that are related to the Repository and Pond 4 (including the LCRS, LDS, telemetry systems, and the Repository cover) and the former millsite. Areas of the former millsite where supplemental standards have been applied are addressed in Volume II—*Monticello Long-Term Surveillance and Maintenance Operating Procedures for Supplemental Standards Properties* (DOE 2001b). Procedures are provided for routine inspections, monitoring events, and contingency plans for corrective actions, when and if they are determined to be necessary.

5.1.1 Summary of Repository and Millsite Long-Term Surveillance and Maintenance Requirements

As described in Volume I—*Long-Term Surveillance and Maintenance Operating Procedures for Monticello Mill Tailings Site Repository and Millsite* (DOE 2001a) the LTSM requirements include:

- Surveillance of the Repository cover on a monthly basis for evidence of erosion, settlement, cover integrity, or vandalism.
- Inspection of the Repository after major storm events for evidence of erosion.
- Quarterly monitoring of the Repository settlement plates.
- Monitoring water levels in the LCRS, leak detection system, and Pond 4.
- Water quality testing of the Repository leachate on a quarterly basis.
- Inspection of Pond 4 liner system.
- Inspection of the former millsite on a monthly basis to ensure institutional controls remain in place.
- Inspection of the wetland areas of the millsite along Montezuma Creek to ensure that no man-made damage is occurring.
- Performance monitoring of the wetland areas of the millsite along Montezuma Creek for success criteria. The requirement to inspect for success criteria will cease once wetland restoration is deemed successful.
- Yearly inspections of the Repository and ancillary facilities by a formal team of inspectors.
- Completion of CERCLA Five-Year Reviews.

5.1.2 Summary of Repository and Millsite Contingency Requirements

The *Repository and Pond 4 Groundwater Contingency Plan-Final* (DOE 1998) addresses the contingency actions that DOE will take if the synthetic liners in Pond 4 and the Repository at the Monticello Millsite remediation site do not perform as designed. Overall performance will be monitored in the liner systems. The LDS sumps are the points of compliance in the respective systems.

When defined thresholds are exceeded, system failures identified, or a release to the environment is confirmed, the specified contingency actions, as outlined in the referenced contingency plan, will be implemented. Contingency actions that may be implemented include:

- Notification of EPA and the State of Utah of any nonroutine problems, occurrences, and mitigation measures that affect the LCRS or the LDS of either the Repository or Pond 4.
- Additional measurement of leakage quantity and quality.

- Evaluation of potential change in ground water quality resulting from either Repository or Pond 4 leakage.
- Installation of downgradient monitoring systems.
- Development of further corrective action plans.
- Inspections and necessary corrective actions to the Repository cover.
- Installation and monitoring of additional settlement plates.

5.2 Long-Term Surveillance and Maintenance Operating Procedures for Monticello Supplemental Standards Properties

Plans and procedures ensuring protection of human health and the environment and the continued effectiveness of institutional controls are discussed in Volume II—*Monticello Long-Term Surveillance and Maintenance Operating Procedures for Supplemental Standards Properties* (DOE 2001b).

DOE has constructed a TSF near the Monticello Repository to manage radiologically contaminated materials resulting from the implementation of this plan. Details of operation of the TSF are included in Volume I, Section 7.0. DOE will be responsible for the ultimate disposition of materials stored at the TSF and for the compliant closure of the TSF. The materials will be sent to the Grand Junction Disposal Cell (or other approved radioactive disposal site) annually or when the TSF reaches 75 percent of storage capacity.

Because contamination is known to remain at supplemental standards properties, DOE conducts radiological scanning to ensure that the contamination is not redistributed to clean areas through erosion or by human actions. DOE also monitors institutional controls that have been implemented to ensure the remedy remains protective of human health and the environment. Contingency plans were included in the supplemental standards applications, which were approved by EPA and UDEQ, for each supplemental standards area. These area specific plans are included in the appendices to Volume II—*Monticello Long-Term Surveillance and Maintenance Operating Procedures for Supplemental Standards Properties* (DOE 2001b).

5.2.1 Summary of City Streets and Utilities Long-Term Surveillance and Maintenance Requirements

As part of the supplemental standards application for the Monticello city streets and utilities, a strategy for managing residual radioactive material left in place was developed. This strategy is defined in Volume II, Section 2.0 and Volume II, Appendix A. The LTSM management strategy includes:

- Implementing institutional controls. These controls include scanning all highway and city street excavations for radioactive material and removal of any radioactive material encountered that exceeds the standard of 5 picocuries per gram (pCi/g).
- Conducting routine surveillances and inspections.

- Implementing contingency actions if radiologically contaminated materials are encountered or disturbed. Radioactive material will be taken to the temporary storage facility (TSF) and ultimately placed in the Grand Junction Disposal Cell near Whitewater, Colorado. Disposal may occur at another approved radioactive disposal site, but disposal at the Grand Junction Disposal Cell is the preferred option.
- Preparing reports for regulatory agencies.
- Keeping records.

Plan implementation includes a Monticello-based DOE representative to provide as-needed field support for any of the above listed activities.

DOE has entered into a Cooperative Agreement with the City of Monticello (DOE 1999a) wherein the parties agreed on the future management of city streets and utilities. As one of the terms of this agreement, DOE provided the city of Monticello with a dump truck and front-end loader for excavating and transporting radiologically contaminated materials. With this equipment, the city will assist DOE in removing and transporting radiologically contaminated materials from the city and UDOT street rights-of-way, utility easements, and from private property to the TSF. Subsequent transportation of all radiologically contaminated materials shall occur in full compliance with federal and state transportation requirements.

Contingency action plans are defined for both planned and unplanned excavations; radiological surveys and site controls; transportation of radiologically contaminated materials; spill response; and operations associated with the temporary storage of the contaminated materials.

5.2.2 Summary of Government Owned Piñon and Juniper Properties Long-Term Surveillance and Maintenance Requirements

As part of the supplemental standards application for the government owned piñon/juniper (P/J) properties, a strategy for managing residual radioactive material left in place was developed. This strategy is defined in Volume II—*Monticello Long-Term Surveillance and Maintenance Operating Procedures for Supplemental Standards Properties* (DOE 2001b). The LTSM management strategy includes:

- Placing restrictions on land use. These restrictions include disallowing construction of structures suitable for human habitation, restrictions on the use of ground water for human consumption, and disallowing overnight camping.
- Implementing institutional controls.
- Conducting routine surveillances and inspections.
- Implementing contingency actions if radiologically contaminated materials are encountered.
- Preparing reports for regulatory agencies.
- Keeping records.

Plan implementation includes a Monticello-based DOE representative to provide as-needed field support for any of the above listed activities.

Contingency action plans are defined for discovery of eroded material; radiological surveys and site controls; transportation of radiologically contaminated materials; spill response; and operations associated with the temporary storage of the contaminated materials.

5.2.3 Summary of Privately Owned PiZon and Juniper Property Long-Term Surveillance and Maintenance Requirements

As part of the supplemental standards application for the privately owned P/J property (MS-00176), a strategy for managing residual radioactive material left in place was developed. This strategy is defined in Volume II—*Monticello Long-Term Surveillance and Maintenance Operating Procedures for Supplemental Standards Properties* (DOE 2001b). The LTSM management strategy includes:

- Placing restrictions on land use.
- Implementing institutional controls (special zoning district).
- Conducting routine surveillances and inspections. Routine surveillances include radiological scanning of footprints of any future building excavations.
- Implementing contingency actions if radiologically contaminated materials are encountered.
- Preparing reports for regulatory agencies.
- Keeping records.

Plan implementation includes a Monticello-based DOE representative to provide as-needed field support for any of the above listed activities.

If radiologically contaminated materials exceeding 40 CFR Part 192.12 standards are encountered within the excavated footprint of a habitable structure, within the excavated spoils pile adjacent to the footprint, or within materials that have eroded from MS-00176, DOE will take specific contingency actions.

Contingency action plans are identified for habitable structure construction; discovery of eroded material; radiological surveys and site controls; transportation of radiologically contaminated materials; spill response; and operations associated with the temporary storage of the contaminated materials.

5.2.4 Summary of Highways 191 and 666 Long-Term Surveillance and Maintenance Requirements

As part of the supplemental standards application for the Highways 191 and 666 rights-of-way, a strategy for managing residual radioactive material left in place was developed. This strategy is defined in Volume II, Section 2.0 and Volume II, Appendix B. The LTSM management strategy includes:

- Placing restrictions on land use.

- Implementing institutional controls.
- Conducting routine surveillances and inspections. Excavations conducted within the highway rights-of-way within the city limits will be radiologically scanned. At the option of the Utah Department of Transportation (UDOT), radiologically contaminated material will be either returned as fill to the excavation or transferred to the TSF for management by DOE.
- Implementing contingency actions if radiologically contaminated materials are encountered or disturbed.
- Preparing reports for regulatory agencies.
- Keeping records.

Plan implementation includes a Monticello-based DOE representative to provide as-needed field support for any of the above listed activities.

DOE has entered into a Memorandum of Understanding (MOU) with UDOT (DOE 1999b) wherein the parties agreed on the future management of the Highways 191 and 666 rights-of-way within the Monticello city limits. If radiologically contaminated materials are encountered during construction activities or are disturbed as a result of natural events, DOE and UDOT will take specific contingency actions. Contingency action plans are defined for both planned and unplanned excavations; radiological surveys and site controls; transportation of radiologically contaminated materials; spill response; and operations associated with the temporary storage of the contaminated materials.

5.2.5 Summary of Montezuma Creek Soil and Sediment Properties Long-Term Surveillance and Maintenance Requirements

As part of the supplemental standards application for OU II soil and sediment area properties, a strategy for managing residual radioactive material left in place was developed. This strategy is included in Volume II, Section 3.0 and Volume II, Appendix D. The LTSM management strategy includes:

- Implementing institutional controls in the form of restrictive easements on land use. The restrictive easement includes prohibiting the construction of structures suitable for human habitation, removal of soil from the easement area, and placing restrictions on the use of ground water for human consumption.
- Conducting routine surveillances and inspections.
- Implementing contingency actions if radiologically contaminated materials are removed from the property.
- Preparing reports for regulatory agencies.
- Keeping records.

Plan implementation includes a Monticello-based DOE representative to provide as-needed field support for any of the above listed activities.

Contingency action plans are defined in Appendix D of Volume II-*Monticello Long-Term Surveillance and Maintenance Operating Procedures for Supplemental Standards Properties* (DOE 2001b) for discovery of violation of restrictive easements. Contingency action plans are defined for habitable structure construction; discovery of eroded material; radiological surveys and site controls; transportation of radiologically contaminated materials; spill response; and operations associated with the temporary storage of the contaminated materials and/or use of the shallow alluvial ground water for purposes of human consumption.

5.3 Long-Term Surveillance and Maintenance Operating Procedures for Monticello Surface and Ground Water

During review of the draft feasibility study report in the summer of 1997, DOE, EPA, and UDEQ mutually agreed that it was not possible at that time to definitively predict the effects that Millsite remediation would have on the ground-water and surface-water systems. A decision was made to conduct an interim remedial action (IRA) and revise the draft feasibility study after post-Millsite remediation conditions in ground water and surface water had stabilized.

LTSM activities for the Monticello Surface and Ground Water Project (MMTS OU III) will not be identified until a final remedy has been selected. A ROD for the Monticello Surface and Ground Water Project is anticipated in 2004.

5.3.1 Summary of Operable Unit III Long-Term Surveillance and Maintenance Requirements

The LTSM requirements will be completed upon finalization of the OU III ROD (anticipated in 2004). The interim remedial action (IRA) ROD was signed in September 1998 and is designed to

- prevent use of contaminated ground water by implementing institutional controls,
- remove contaminants from the ground water and, in turn, the surface water, by treating extracted ground water through dewatering activities,
- continue to monitor the changing conditions in the alluvial aquifer and in surface water and collect data to characterize post-remediation conditions at the site, and
- evaluate the feasibility of a permeable reactive treatment (PeRT) wall for in-situ treatment by conducting a pilot-scale treatability study.

The use of contaminated water is prohibited through a *Ground-Water Management Policy for the Monticello Mill Tailings Site and Adjacent Areas* issued by the State Engineer's Office on May 21, 1999. The policy states that new applications to appropriate water for domestic purposes from the shallow alluvial fill aquifer will not be approved. Currently there are no known users of water within OU III for domestic purposes. Deed restrictions have also been placed on properties formerly owned by DOE that restrict water usage for domestic purposes. DOE accepts responsibility for ensuring that these institutional controls are working and

monitors them by conducting annual inspections of the affected properties to look for evidence of domestic use of the alluvial ground water in the OU III area.

Institutional controls for contaminated soil and sediment properties include a prohibition on building habitable structures in and removal of contaminated soil from supplemental standards areas. The U.S. Army Corps of Engineers negotiated settlements with property owners in which compensation was made to the owners for restrictive easements that formalized the institutional controls. DOE accepts responsibility for monitoring the institutional controls. Property inspections described in Volume II—*Monticello Long-Term Surveillance and Maintenance Operating Procedures for Supplemental Standards Properties* (DOE 2001b) address the LTSM requirements for monitoring institutional controls placed on contaminated soil and sediment properties.

5.4 Long-Term Surveillance and Maintenance Operating Procedures for Annual Inspections and CERCLA Five-Year Reviews

Annual inspections, performed by the LTSM Program, are conducted to ensure the remedy remains protective of human health and the environment. The inspections are designed to lead to successful completion of CERCLA Five-Year Reviews. The specific requirements of the annual inspection report and CERCLA Five-Year Reviews are provided in the *Monticello Long-Term Surveillance and Maintenance Operating Procedures for Annual Inspections and CERCLA Five-Year Reviews* (Volume IV) (DOE 2001c).

Annual reviews are scheduled in September of each year and CERCLA Five-Year Review Reports are scheduled every 5 years with the next five-year review due in June of 2002. Subsequent five-year reviews are triggered by the submittal date of the previous five-year review.

6.0 Scheduled LTSM Activities

The Monticello LTSM Representatives are responsible for conducting the scheduled activities listed in [Table 6–1](#). This table includes a cross-reference to the LTSM operating procedure volume and page number where the activity is discussed in detail.

Table 6–1. Monticello LTSM Representative Scheduled Activities

Activity	LTSM Operating Procedure		Comments
	Volume	Page Number	
Weekly			
Water Level Monitoring of Repository and Pond 4 LCRS and LDS	Volume I	Page 3–3	
City Streets and Utilities Surveillance	Volume II	Page 2–2	
Highways 191 and 666 Surveillance	Volume II	Page 2–5	
Identify Planned excavation of City Streets and Utilities	Volume II	Page 2–5	
Identify Planned excavation of Highways 191 and 666	Volume II	Page 2–6	
TSF Inspection	Volume I	Page 7–6	Checklist available
Monthly			
Repository Surveillance	Volume I	Page 2–2	Checklist available
Pond 4 Surveillance	Volume I	Page 4–7	Checklist available
MS-00176-VL Surveillance	Volume II	Page 2–7	
Sample Pond 4 LDS and Pond 4	Volume I	Page 4–5	If action leakage rate is exceeded, sample for Appendix C analytes.
Print Repository Water Level Monitoring Report	Volume I	Page 3–4	
Print Pond 4 Water Level Monitoring Report	Volume I	Page 4–3	
Quarterly			
Repository Surveillance	Volume I	Page 2–7	Checklist available
Millsite Surveillance	Volume I	Page 5–2	
Government Owned P/J Properties Surveillance	Volume II	Page 2–8	
Highways 191 and 666 Surveillance	Volume II	Page 2–6	
Sample Repository LDS	Volume I	Page 3–4	If water is available, sample for Appendix C analytes.
Sample Pond 4 LDS and Pond 4	Volume I	Page 4–5	If water is available, sample for Appendix C analytes.
Annually			
Repository Telemetry Test	Volume I	Page 3–11	
Pond 4 Telemetry Test	Volume I	Page 4–9	
Sample Repository LDS	Volume I	Page 3–4 Page 3–9	If action leakage rate is exceeded, sample for Appendix H analytes.
Sample Pond 4 LDS and Pond 4	Volume I	Page 4–5 Page 4–6	If water is available, sample for Appendix H analytes.
Determine Ownership of MS–00176–VL	Volume II	Page 2–8	

Table 6–1 (continued). Monticello LTSM Representative Scheduled Activities

Activity	LTSM Operating Procedure		Comments
	Volume	Page Number	
Triggered by 25 Year Storm Event			
Repository Surveillance	Volume I	Page 2–10	
MS-00176-VL Surveillance	Volume II	Page 2–7	
City Streets and Utilities Surveillance	Volume II	Page 2–2	
Government Owned P/J Properties Surveillance	Volume II	Page 2–8	
Soil and Sediment Properties Surveillance	Volume II	Page 2–10	
Highways 191 and 666 Rights-of-Way	Volume II	Page 2–5	
Spring and Fall of Each Year			
Soil and Sediment Properties Surveillance	Volume II	2–10	

The Contractor LTSM Project Manager is responsible for conducting the scheduled activities listed in the [Table 6–2](#). This table includes a cross-reference to the LTSM operating procedure volume and page number where the activity is discussed in detail.

Table 6–2. Contractor LTSM Project Manager Scheduled Activities

Activity	LTSM Operating Procedure		Comments
	Volume	Page Number	
Annual Inspection	Volume IV	Page 2–2	Conducted in August of each year. Checklist available.
CERCLA Five-Year Review	Volume IV	Page 3–1	Conducted every five years. The next one is due June 2002. Checklist available.

7.0 Organizational Resources

In 1988, EPA, UDEQ, and DOE entered into a Federal Facilities Agreement (FFA) that defines the roles and responsibilities of the parties for response action at the MMTS and MVP sites. DOE is a responsible party with respect to past releases at the Monticello sites. DOE is the lead agency and performs response actions pursuant to Section 120 of CERCLA. EPA and UDEQ provide oversight of the response actions as described in the FFA. The roles, responsibilities, and management relationship among DOE, EPA, and UDEQ are defined in the FFA.

7.1 DOE Organization

The Assistant Secretary for Environmental Management is the approving official who has overall responsibility and authority within DOE for the Monticello Projects (see [Figure 7-1](#)). DOE-Headquarters (HQ) point of contact for the Monticello Projects is assigned under the Office of Project Completion, Idaho Operations Office (ID). The Manager of DOE-ID has been delegated the responsibility and authority for the field management of the Monticello Projects. This authority has been delegated to the Manager of DOE Grand Junction Office (GJO).

The DOE-GJO Manager has been delegated the authority, responsibility, and accountability for overall project implementation and contract administration. The DOE-GJO Manager assigns the DOE-GJO Project Managers. With the completion of Monticello Projects, the MVP Project Manager, MMTS Project Manager, and Site Engineer responsibilities have been consolidated and are implemented by the DOE-GJO Monticello Project Manager. The DOE-GJO Monticello Project Manager is the DOE-GJO implementing official and has been delegated the authority from the DOE-GJO Manager for day-to-day implementation, management, and direction of the projects. The DOE-GJO Monticello Project Manager is responsible for overall project integration and daily project coordination and fills the responsibilities of the Project Coordinator as defined in the FFA. The Project Coordinator is the formal GJO point of contact for EPA, UDEQ, and DOE-HQ for the Monticello Projects.

The GJO has also assigned matrix support for procurement, public affairs, health and safety, legal, and environmental compliance to the Monticello Projects. Financial, procurement, and real estate management support is also provided by ID.

DOE-GJO was assigned responsibility for the LTSM Program on January 1, 1989. Because the Monticello sites were once part of DOE's former Surplus Facilities Management Project, all long-term activities at Monticello were specifically included in the scope of the LTSM Program. Administration of LTSM was transferred to the LTSM Program on October 1, 2001. Completion of restoration construction warranty items and OU III will be conducted under the Monticello Project.

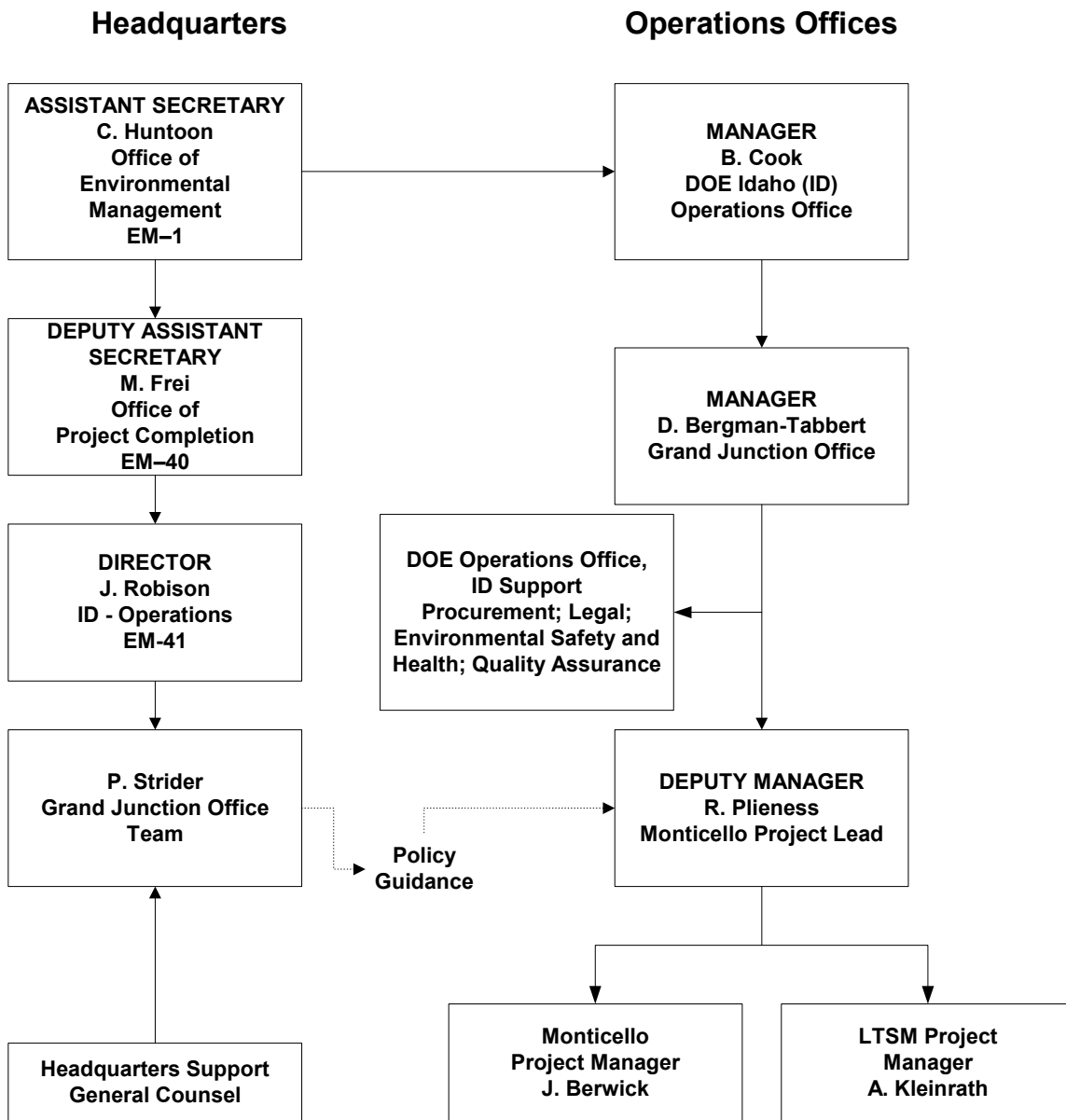


Figure 7-1. DOE Project Management Structure

The Monticello project was transferred to the LTSM program in October 2001; however, some repair items remained to be completed to fully implement the remedy. The DOE-GJO Monticello Project Manager will oversee completion of all remaining repair items and implementation of the remedy for OU III. The DOE-GJO LTSM Project Manager will manage the maintenance items identified in this manual and Volumes I-IV of the LTSM operating procedures. If there is a task that could potentially fall under LTSM or OU III, the DOE-GJO Monticello Project Manager and DOE-GJO LTSM Project Manager will jointly determine which manager will be responsible for completion of the work.

7.2 Contractor Organization

The DOE–GJO has contracted with MACTEC–ERS as the technical assistance and remediation contractor (TAR). The TAR is responsible for ensuring that all remedial activities are executed in compliance with the FFA, regulatory, and health and safety, and quality assurance requirements. The DOE–GJO contractor is currently being recompeted. The new contractor will be performing the same scope of work.

The Major Projects Manager (contractor employee) reports to the DOE–GJO Deputy Manager and Project Managers and has the ultimate responsibility for implementing the project scope and schedule defined in Task Orders by the DOE project management staff. The TAR has assigned Project Managers to each of the Monticello Projects who report to the Major Projects Manager and are responsible for the day-to-day implementation, management, and direction of the projects. A Monticello, Utah-based contractor employee called the Monticello LTSM Representative has been assigned to carry out the LTSM activities. The Monticello LTSM Representative reports to the Contractor LTSM Project Manager and is assisted by a backup Monticello LTSM Representative. [Figure 7–2](#) shows the organization elements of MACTEC–ERS.

[Figure 7–3](#) shows the Monticello LTSM project organization including the interaction between the various organizations (e.g., EPA, UDEQ, UDOT, City of Monticello, DOE, and the contractor).

7.3 Contact Information

The contact address and telephone number of the DOE–GJO Monticello Project Manager is:

DOE–GJO Monticello Project Manager
U.S. Department of Energy
2597 B3/4 Road
Grand Junction, Colorado 81503
(970) 248-6000

The contact address and telephone number of the Monticello LTSM Representative is:

Monticello LTSM Representative
U.S. Department of Energy
Monticello Field Office
7031 South Highway 191
P.O. Box 909
Monticello, Utah 84535
(435) 587-2902

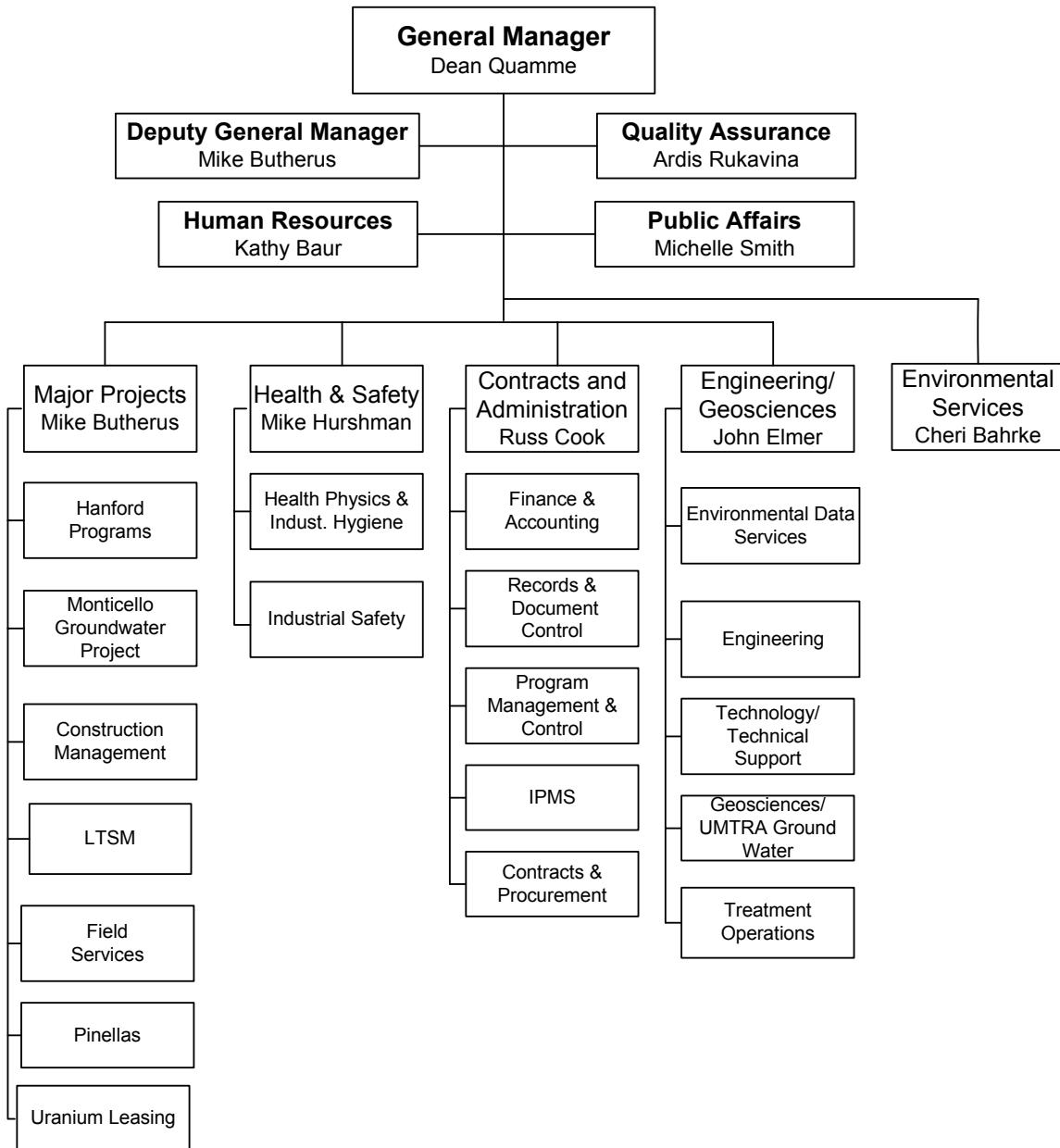


Figure 7-2. Contractor Management Structure as of April 25, 2002

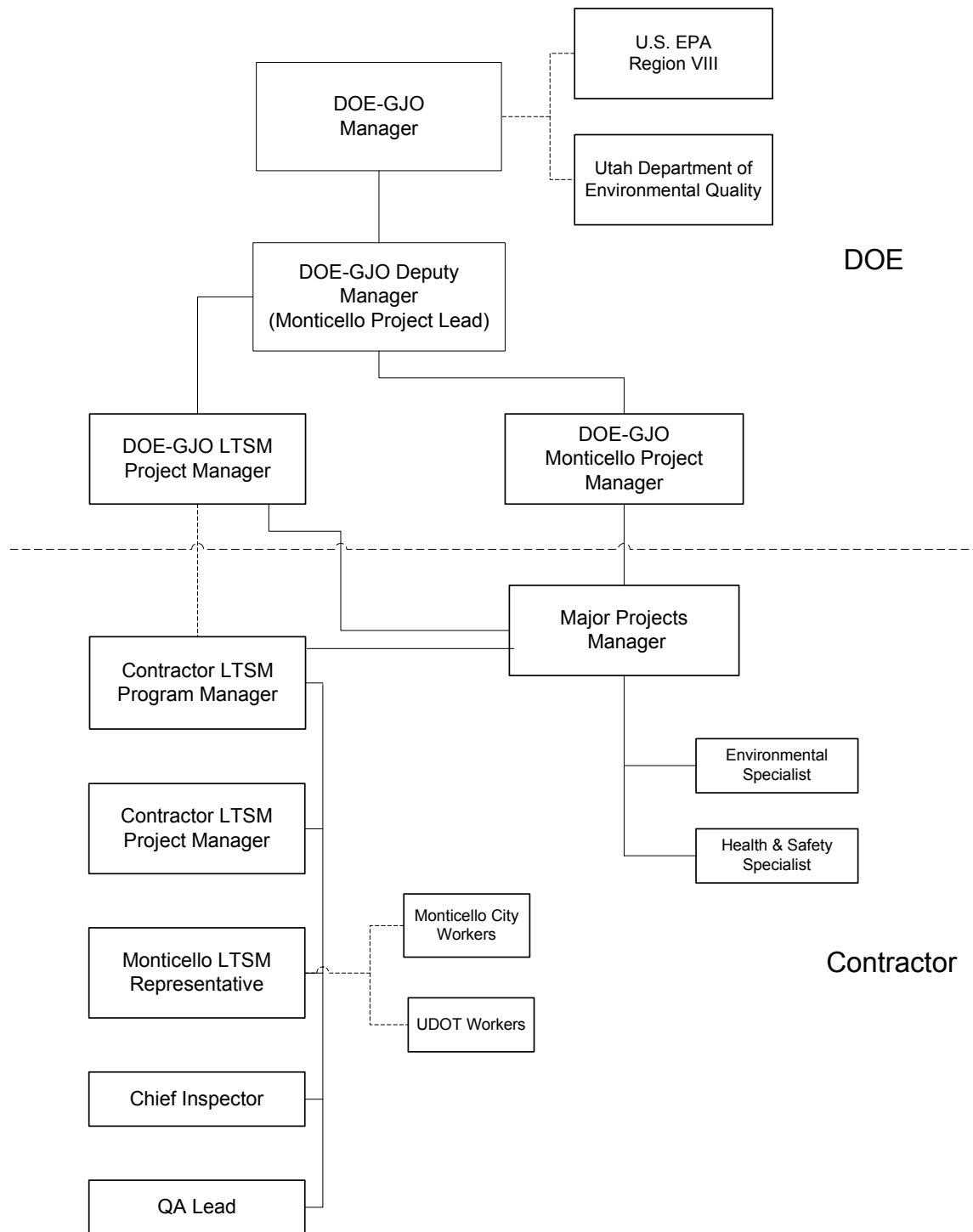


Figure 7–3. Monticello LTSM Project Organization

End of current text

8.0 Change Control Process

8.1 Purpose

The purpose of this procedure is to ensure that changes to this manual are appropriately documented and that they have been reviewed by the affected organizations and approved by the responsible levels of management.

8.2 Scope

This procedure shall be used to initiate and authorize changes to this *Monticello Long-Term Surveillance and Maintenance Administrative Manual* and the associated LTSM Operating Procedures (Volumes I through IV).

8.3 Responsibilities and Procedures for Review and Change Control

DOE, EPA, UDEQ, or contractor staff may make requests for changes or additions to the LTSM procedures. Requests for changes will be made to the DOE–GJO LTSM Project Manager who will arrange a meeting with DOE, EPA, and UDEQ to discuss the proposed changes and jointly determine the need for a change. When a change is required, DOE will direct the Contractor LTSM Project Manager to initiate the change control process.

Upon being directed to initiate a new procedure or make a revision to an existing procedure or process, the Contractor LTSM Project Manager will::

- Prepare a draft of the new or revised material for review
- Determine who will review the proposed change
- Distribute the material with a Record of Review form to the designated reviewers
- Resolve internal review comments
- Prepare a draft for review by DOE–GJO and regulators (EPA, Region VIII, and UDEQ). Concurrence is required by all reviewers.
- Resolve review comments
- Prepare the new or revised material for distribution
- File the review records in accordance with the working file index

The Contractor LTSM Project Manager will:

- Assign personnel to proceed with preparing a draft of the change
- Designate a list of reviewers

- Send a draft final copy to DOE–GJO and the regulators for review following resolution of comments resulting from the internal review
- Ensure external comments have been satisfactorily addressed before authorizing the change by signature on the documents Signature Page.

Designated Reviewers will:

- Review the change for completeness and technical accuracy
- Ensure the change will enhance or improve the procedure
- Use the Record of Review form provided with the draft to document comments

Changes will typically include reissuing the:

- Signature page, authorizing the change;
- Table of Contents, identifying the change through side-bars, dates, or highlighting; and the entire procedure, chapter, or section rather than just a page.

Markings such as change bars or text highlighting of some sort may be used to identify the revised material. When a new procedure, process or a major revision to a current procedure is prepared markings of this nature are not needed and the change will be noted by the revision date on the footer and the identifier used in the Table of Contents.

After all internal and external review comments have been addressed the changes will be issued to the document holders (including Master Copy, Record Copy, and Information Repository copy holders) identified on the controlled document distribution list shown on [Table 8–1](#). Additional instructions provided with the Document Control distribution sheet will indicate whether the material is new or has been significantly revised.

8.4 Records

A historical copy of the documents, including changes and reviews will be maintained in accordance with the records requirements of the *LTSM Working File Index*.

Table 8–1. Distribution List

	LTSM Administrative Manual	Volume I	Volume II	Volume III	Volume IV
DOE–GJO LTSM Project Manager	2 copies	2 copies	2 copies	2 copies	2 copies
EPA	2 copies	2 copies	2 copies	2 copies	2 copies
UDEQ	2 copies	2 copies	2 copies	2 copies	2 copies
Monticello LTSM Representative(s)	1 copy	1 copy	1 copy	1 copy	1 copy
Monticello Information Repository	2 copies	2 copies	2 copies	2 copies	2 copies
Contractor LTSM Project Manager	1 copy	1 copy	1 copy	1 copy	1 copy
LTSM Record Custodian (record copy)	1 copy	1 copy	1 copy	1 copy	1 copy
Contractor Library	1 copy	1 copy	1 copy	1 copy	1 copy
Contractor Technical Coordinator	Master Copy	Master Copy	Master Copy	Master Copy	Master Copy
Monticello City Manager	1 copy	1 copy	1 copy	1 copy	1 copy
UDOT Environmental Engineer			1 copy		

End of current text

9.0 Records Management

All records created in support of LTSM of the MMTS and MVP properties shall be managed in accordance with the requirements and policy of the LTSM Program for record and nonrecord (i.e., working copies) material. This guidance includes, but is not limited too, meeting the requirements of Title 44, *United States Code*, Chapter 33, “Disposal of Records”; 10 CFR 835, *Subpart H—Records*; 36 CFR 1228, *Disposition of Federal Records*, Subpart B, Scheduling Records; DOE Order 1324.5B, *Records Management Program*; and the *Quality Assurance Project Plan for the Monticello LTSM Project* (MAC-2152.1).

These requirements are implemented through the records plan documented as the *LTSM Working File Index*. It is located on the GJO intranet at R:\Forms\Records File Indices\MRAP-RXX.doc. This living document provides detailed guidance for the creation, protection, responsibility, location, storage, access, and disposition of all LTSM Monticello records. Revisions to this document are controlled by the Contractor LTSM Project Manager. In addition, an electronic database (GJO Record Log System) provides access control and record retrieval capabilities through the application of bar-code technology. The database is accessible from the GJO by the LTSM Record Custodian.

9.1 Information Repository and LTSM Record Collection

There are two collections of documents associated with Monticello LTSM activities, the Information Repository, and the LTSM Records Collection.

Information Repository—An information repository is maintained at the Monticello Field Office. The repository is a working set of documents which contains the information required under CERCLA and is available for review by EPA, UDEQ, and the public. The information repository is updated, as necessary, and after completing the annual site inspections.

The information repository contains the documents necessary to prepare for and conduct site surveillance and maintenance activities. A copy of the resulting reports will be retained in the Information Repository and the record copy will reside in the LTSM Record Collection.

The annual reports and supporting documentation in the information repository will

- Document the history of the remedy performance,
- Provide DOE, EPA, and UDEQ with the information necessary to forecast future surveillance and maintenance needs, and
- Provide information to the public to demonstrate that remedy integrity has been maintained.

LTSM Record Collection—The LTSM Record Collection contains the record copy for the LTSM Program. The retention period and disposition authority for all records created in support of the LTSM of the supplemental standards properties will be documented in the *LTSM Working File Index*. This collection is managed and stored in accordance with the requirements established in the Quality Assurance Project Plan (QAPjP) provided in Appendix A.

The LTSM Record Collection is stored at the DOE–GJO facility. The management, retrieval, and storage of the collection is overseen by the LTSM Record Custodian. The LTSM Record Custodian is appointed by the Contractor LTSM Project Manager. Records within the collection are filed in accordance with the guidance and structure provided in the *LTSM Working File Index*.

9.2 Record Keeping

Record keeping is included in this umbrella document because record keeping requirements are common to all aspects of the LTSM program.

9.2.1 Assigning File Codes to Records

The Monticello LTSM Representative and all other personnel generating LTSM records for the supplemental standards properties shall:

- Ensure that the applicable LTSM project file number is placed on *all* records created as a result of the LTSM of the supplemental standards properties
- Use the most current revision of the *LTSM Program Working File Index* as the source for assigning project file numbers. The most current revision can be found on the GJO computer network or in the LTSM Record Collection.
- Place the project file number on the distribution list for the record *or* write the project file number in the lower right-hand corner of the record.

If the *LTSM Program Working File Index* does not address a record created by these procedures, or *if* additional environmental protection or control is needed for a record type, *then* contact the Contractor LTSM Project Manager for resolution of the issue.

9.2.2 Transferring Records to the LTSM Record Collection

Most record material is transferred to the LTSM Record Collection at the time of distribution. The records will be bar coded with key data entered in the Record Log System upon receipt by the LTSM Record Custodian, or designee, then filed in the LTSM Record Collection.

Note: All records associated with radiologically contaminated materials having Ra-226 concentrations greater than 130 pCi/g shall first be submitted to the Radiological Control Manager for supervisory review and sign-off before being sent to the LTSM Records Custodian.

9.3 Drawings

A drawing index resides in the Monticello Field Office listing engineering drawings of all supplemental standards properties at Monticello, Utah. Repository and Pond 4 as-builts and technical documentation of the telemetry system are kept in the Monticello Field Office records

vault. The drawing index is used by the Monticello LTSM Representative to identify the appropriate drawing for locating contamination left in place, utility lines, erosion activity, and excavations for each supplemental standards property. The drawing index lists the scale of each drawing and the most recent date that each drawing was electronically updated. MVP completion reports also include drawings of assessed and removed contamination and may include contamination data in adjoining city streets or utility rights-of-way.

The Monticello LTSM Representative shall keep the drawings up to date with pertinent information required by the LTSM Operating Procedures (Volumes I through IV). The drawings will be annotated in permanent ink by the Monticello LTSM Representative each time new information with regard to radioactive contamination becomes available. The drawings shall be stored in the Monticello Field Office records vault. The annotated drawings will be forwarded annually in August by the Monticello LTSM Representative to the Contractor LTSM Project Manager to be electronically updated. Copies of the revised drawings will be returned to the Monticello LTSM Representative and a record copy sent to the LTSM Records Custodian for storage in the LTSM Record Collection.

9.4 Record Field Books

Documentation is necessary to record LTSM activities for Monticello. The activities will be recorded in the record field books. The following section describes the process for ensuring complete and accurate histories of these activities so that evidence of compliance with the LTSM Plans is adequately documented.

The Contractor LTSM Project Manager or designee shall:

- Assign record field books to the Monticello LTSM Representative.
- Assign individual books for the Repository, Pond 4, each of the supplemental standards properties, and to the TSF as follows:
 - Repository Record Book
 - Pond 4 Record Book
 - City Streets and Utilities Record Book
 - Highways 191 and 666 Record Book
 - MS-00176-VL Record Book
 - Government-Owned P/J Properties Record Book
 - OU II Montezuma Creek Soil and Sediment Properties Record Book
 - TSF Record Book
- Maintain a Record Field Book Log to identify to whom the record field books are issued, location of the record books, and the unique identifier (beginning with Book #1) for each record book.

The Monticello LTSM Representative, upon receiving a record field book, shall:

- Review the procedures within this manual and the operating procedures to determine which information shall be recorded in the record field books.
- Record the following on the cover of the record field book:
 - Title of record book (property identification)
 - Starting date of record (use all four characters to designate the year)
 - Identification of the Monticello LTSM Representative, including address and phone number
- On the first page of the record field book, prepare a Signature/Initial Log that lists the printed name, signature, and initials used by the Monticello LTSM Representative, backup personnel, and reviewers who are authorized to make entries in the record field book; date this page.
- Create a duplicate record field book by photocopying each day's entry upon completion. The duplicate will not be removed from the Monticello field office until the record field book is completed and verified. Any changes made by the independent reviewer will be included in the duplicate book. The original record field book will be forwarded to the LTSM Record Collection through the LTSM Record Custodian for long-term retention and the duplicate will be stored in the Information Repository.

9.4.1 Recording Field Data

When making entries in the record books, the Monticello LTSM Representative shall:

- Write legibly with permanent black or dark blue ink so that the entry is reproducible.
- Clearly describe the observations that are made so that other equally experienced personnel can understand what was observed.
- Keep the record field book pages intact (i.e., do not remove pages from the book).
- Sign and date (using all four characters to designate the year) the entry at the conclusion of the entry.
- Make a copy of each completed entry and file it in the duplicate binder.
- If a page has entries for more than one day, sign and date each entry.
- If a page or part of a page must be left blank, rule across the blank area and sign and date the rule line.
- If entries for a specific activity are made on two or more pages, or if entries are separate records, cross-reference the pages or records so that they are known to belong together.

- For the last entry in a record field book, state that activities are complete or give a reference to a sequential record book.
- For the first entry in a record field book, give reference to the previous record book.
- Transfer completed record field books to the Contractor LTSM Project Manager or his designee for review.

Correcting Errors

If an error is made in a record field book entry, the Monticello LTSM Representative shall:

- Draw a line through the error.
- Enter the correct data.
- Initial and date the correction.
- State in the record field book the reason for the correction, as appropriate.

Note: Material such as opaquing fluid or correcting tape that obscures the original entry is prohibited.

9.4.2 Storage of Record Field Books at the Monticello Field Office

The Monticello LTSM Representative shall:

- Protect record books from loss or damage.
- Protect record books from light, moisture, heat, and pests.
- Mark photocopies of record books with the word “copy”.

9.4.3 Review of Record Field Books

When an LTSM record field book is completed, the Monticello LTSM Representative shall submit it to the Contractor LTSM Project Manager or designee, who shall then assign an Independent Reviewer to review the book.

The Independent Reviewer shall:

- Evaluate the record book for accuracy, content, error correction, legibility, and reproducibility.
- Ensure that record book notations and observations conform to the requirements of the procedures in this manual.

- When satisfied that the data entered is complete and correct, sign and date the record book, making note of the pages and supporting documentation that were reviewed.
- *If* an error in an entry is found, *then*:
 - Verify the correction with the Monticello LTSM Representative.
 - Draw a line through the error.
 - Make the correct entry.
 - Initial and date the correction.
 - State in the record book the reason for the correction.
 - State that the correction was verified by the Monticello LTSM Representative.
- *If* a written comment needs to be made in a record book, *then*:
 - Clearly identify the comment as a review comment.
 - Sign and date the comment.
- *If* any of the pages are changed during the review, *then* a copy shall be made of the pages for the duplicate record field book.

9.4.4 Transfer of the Record Field Books

When the review of a record field book is complete, the copied pages will be forwarded to the Monticello LTSM Representative at the Monticello Field Office for integration into the duplicate record field book. The original record field book will be forwarded to the LTSM Record Custodian at the DOE–GJO for bar coding and storage in the LTSM Record Collection.

9.5 Photographic Records

Photographs are used as a means to ensure that a thorough and efficient inspection of each property is performed. The Monticello LTSM Representative shall:

- Take photographs with 35-millimeter (mm) film that is *not* self-developing.
- When a photograph is taken, record the following information in the record book:
 - Property and location
 - Date; time of day
 - Film roll number and frame number
 - Subject and description
 - Weather conditions, if applicable.
 - Direction photograph taken.

Upon receipt of the developed prints, identify each print on a label as follows:

- Site name (or abbreviation); date (e.g., 2/05/2000); description.
- Use the following abbreviations, if needed:

N	North	WSW	West southwest
NNE	North northeast	NW	Northwest

NE	Northeast	NNW	North northwest
ENE	East northeast	SM	Survey monument
E	East	SMK	Site marker
ESE	East southeast	mi.	mile
SE	Southeast	in.	inches
SSE	South southeast	ft	foot
S	South		
SSW	South southwest		
SW	Southwest		
W	West		
WNW	West northwest		

- Place photographic prints in the photographic file located in the Monticello Field Office.

9.5.1 Negatives

The Monticello LTSM Representative shall:

- Place the photograph negatives in archival-quality protective sleeves and annotate the sleeve with record book page number, film roll number, and frame number.
- Create an index of the negatives consistent with the annotations that are placed on the prints.
- Place the negatives in the records vault at the Monticello Field Office.
Note: The negatives will become the long-term record, whereas the prints will be kept for convenience.
- The negatives shall be transferred to the LTSM Record Collection biannually.

End of current text

10.0 Health and Safety

LTSM activities will be performed in accordance with the requirements specified in the *Monticello LTSM Project Safety Plan* (DOE 2001d). As a supplement to the project safety plan, Job Safety Analyses (JSAs) may be developed for tasks specific to LTSM. The *Monticello LTSM Project Safety Plan* (DOE 2001d) is specific to Monticello activities and is consistent with *Grand Junction Office Health and Safety Standards* (MACTEC-ERS and *WASTREN-GJ*, GJO 2) that are applicable to all projects managed by DOE-GJO. A copy of the *Grand Junction Office Health and Safety Standards* (GJO 2) and *Monticello LTSM Project Safety Plan* (DOE 2001d) are maintained in the Information Repository located in the Monticello Field Office.

In Monticello, the Monticello LTSM Representative is the Site Safety Supervisor and has the authority to enforce safety requirements for all activities conducted on DOE property.

End of current text

11.0 Training

Training requirements are based on the individual tasks identified in the LTSM operating procedures (Volumes I through IV). Training identified in [Table 11-1](#) is required for personnel conducting LTSM activities identified in the *Long-Term Surveillance and Maintenance Operating Procedures for the Monticello Mill Tailings Site Repository and Millsite* (DOE 2001a). Training identified in [Table 11-2](#) is required for personnel conducting LTSM activities identified in the *Monticello Long-Term Surveillance and Maintenance Operating Procedures for Supplemental Standards Properties* (DOE 2001b). Training identified in [Table 11-3](#) is required for personnel conducting LTSM activities identified in the *Monticello Long-Term Surveillance and Maintenance Operating Procedures for Annual Inspections and CERCLA Five-Year Reviews* (DOE 2001c). Training matrices will be developed for operating procedures identified in Volume III when it is completed.

The Facility Operations Support contractor maintains training records for contractor personnel in the GJO. They are available by contacting the Training Department at (970) 248-6797. Copies of training qualification cards for City of Monticello employees are maintained in the Monticello Field Office.

At a minimum the Monticello LTSM Representative will have current certification as a Radiological Control Technician (RCT) and as a Hazardous Material Shipper/Driver, and have working knowledge of the LTSM Operating Procedures. RCT qualifications supersede Radiological Worker II (RWII) training. The Monticello LTSM Representative shall also be qualified as the Safety Supervisor through training and as authorized by the Health and Safety Manager.

Key to LTSM training matrix tables:

LTSM Briefing: Overview of the program, LTSM Administrative Manual, and relevant operating procedures (GJO course IT048).

LTSM Training: Training provided to the Monticello LTSM Representative to implement the requirements of the Monticello Administrative Manual and the Operating Procedure Manuals. This training is provided by the Contractor LTSM Project Manager.

RW II: Radiological Worker II Training (GJO Course HS 113) and required refresher training (GJO HS 115 or HS 117).

Scintillometer Training: On-the-Job (OJT) training includes operation and use of the Delta and Gamma Scintillometers in conducting radiological surveys (Chapters 2, 3, 5, and 6 of the Field Services Manual, MAC-3000).

Table 11-1. Training Matrix for LTSM Operating Procedures for the Monticello Mill Tailings Site Repository and Millsite—Volume I

Monticello LTSM Operating Procedures— Volume I Chapters	Monticello LTSM Representative	City Workers		Environmental Specialist (GJO)	Carrier Operator (City worker or Monticello LTSM Representative)	
		< 130 pCi/g	> 130 pCi/g		<130 pCi/g	> 130 pCi/g
Section 1.0—Manual Overview	LTSM Briefing					
Section 2.0—Repository Cover	RCT Qualified LTSM Training					
Section 3.0—Repository LCRS and LDS	RCT Qualified LTSM Training <i>Environmental Procedures Catalog (GJO 6)</i>					
Section 4.0—Pond 4	RCT Qualified LTSM Training <i>Environmental Procedures Catalog (GJO 6)</i>					
Section 5.0—Former Millsite	LTSM Training					
Section 6.0—Transportation of Radiologically Contaminated Material	LTSM Training RCT qualified DOE – DOT HazMat Certified Shipper/Driver (HM 1 through 12 & 15)	LTSM Briefing GRT	LTSM Briefing RW II HM 1, 2, 10, 15	DOE–DOT Hazmat Certified Shipper HM 1 through 12 40 CFR 260-299	LTSM Briefing GRT	LTSM Briefing RW II HM 1, 2, 10, 15
Section 7.0—Management of the Temporary Storage Facility	LTSM Training RCT Certified 1910.120 Training	LTSM Briefing GRT	LTSM Briefing RW II	1910.120 Training		

Table 11-2. Training Matrix for Monticello LTSM Operating Procedures for Supplemental Standards Properties—Volume II

Monticello LTSM Operating Procedures—Volume II Chapters	Monticello-LTSM Representative	City Workers		UDOT Workers	Environmental Specialist (GJO)
		< 130 pCi/g	> 130 pCi/g	< 130 pCi/g	
Section 1.0—Manual Overview	LTSM Briefing				
Section 2.0—Routine Surveillance	LTSM Training RCT qualified				
Section 3.0—Radiological Surveys	LTSM Training Scintillometer Training NORM Iden. (OJT)				
Section 4.0—Radiologically Contaminated Material	LTSM Training RCT qualified	LTSM Briefing GRT	LTSM Briefing RW II	LTSM Briefing GRT	
Section 5.0—Suspect Hazardous Substances	LTSM Training RCT Qualified Respirator Wearer PID Training				40CFR 260-299 49CFR 106-180 40CFR 300-399 40CFR 761-763

Table 11–3. Training Matrix for Monticello Long-Term Surveillance and Maintenance Operating Procedures for Annual Inspections and CERCLA Five-Year Reviews—Volume IV

Monticello LTSM Operating Procedures Volume IV Chapters	Monticello LTSM Representative	Chief Inspector and Inspection Team Members
Section 1.0—Manual Overview	LTSM Briefing	
Section 2.0—Annual Inspections	RCT Qualified	GRT
Section 3.0—CERCLA Five-Year Reviews	RCT Qualified	GRT

NORM Identification: Field recognition of Naturally Occurring Radioactive Materials (NORM) will be provided by a geologist.

RCT: Radiological Control Technician qualified through GJO course RT003 to perform Health and Safety functions associated with radiological controls and monitoring.

Respirator Wearer: Initial and refresher training for selection, inspection and wearing a respirator (GJO Course HS350). Occupational Medical evaluation and a Fit-Test are required prior to respirator use.

Photo ionization detector (PID) Training: On-the-job training in the operation and use of a PID for field screening of organic vapors. Training is provided by Health and Safety personnel.

HM 1 through 12 and HM 1, 2, 10, and 15: These refer to GJO Hazardous Materials training course modules (GJO course numbers HM101, 102, etc.) Completion of HM101 through HM112 will qualify the individual as a Certified Shipper. Completion of HM101, HM102, HM110, and HM115 will qualify the individual as a Hazardous Materials Driver.

GRT: General Radiological Training (GJO Course HS111) provides general information about radioisotopes and access control and protection.

CFR Standards: The Environmental Specialist will have knowledge of CFRs pertaining to Hazardous Waste (40 CFR 200-299, CERCLA 40 CFR 300-399), Toxic Substances Control Act (40 CFR 761-763), U.S. Department of Transportation (DOT) regulations (49 CFR 106-180) and in current Occupational Safety and Health Administration hazardous waste training regulations (29 CFR 1910.120) GJO Course HS203.

End of current text

12.0 Quality Assurance

A Quality Assurance Program Plan (QAPP) for the DOE LTSM Program has been developed for long term surveillance and maintenance activities. The QAPP covers all LTSM Program sites assigned to DOE–GJO. To meet the project specific needs identified in task orders for the Monticello LTSM Project, a QAPjP has been prepared as a subtier quality plan in order to tailor the GJO quality assurance requirements to the activities and inspections of the Monticello LTSM Project. The QAPjP, similar to the QAPP, specifies requirements for

- project planning and organization;
- preparation, implementation, and maintenance of project documents and records;
- management of work processes including inspections, corrective actions, reviews, control and use of measuring and test equipment, and systems for purchased items and services; and
- oversight of project activities through Management and Independent Assessments.

The *Quality Assurance Project Plan for the Monticello LTSM Project* (MAC-LMNT 2152.1) (DOE 2000b) is included as Appendix A. The *Quality Assurance Program Plan (QAPP) for the Long-Term Surveillance and Maintenance Program* (MAC-2152) (DOE 1999d) is available through the Contractor LTSM Project Manager.

End of current text

13.0 References

Several references, available for review at the Monticello Field Office by the general public, EPA, and UDEQ, are applicable to LTSM activities conducted at Monticello. The references, available from the Information Repository, are listed in the index to the *Information Repository for the U.S. Department of Energy Monticello Mill Tailings Site/Monticello Vicinity Properties, Subject Index* which is provided as Appendix B.

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- Section 5.0 Portable Gamma Scintillometer Measurements
- Section 6.0 Delta Scintillometer Measurements for In-Situ Radium Analysis

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Appendix A

Quality Assurance Project Plan
for the
Monticello Long-Term Surveillance and Maintenance Project

Appendix B

Information Repository for the U.S. Department of Energy Monticello Mill Tailings Site/Monticello Vicinity Properties Subject Index